

Appl. No. 09/805,620

REMARKS

Claims 27-35, 40, 48, and 49 are pending in the application with claims 38, 43, and 45-47 cancelled herein.

Applicant expresses appreciation for the telephonic interview on May 31, 2007 between Applicant's attorney, James Lake, and Examiner Stouffer. The interview was in response to Applicant's request for clarification of the structural features in Ohashi and DiMeo alleged to disclose the limitations of claim 48. It is Applicant's understanding that the Examiner essentially reiterated the statements on page 7 of the Office Action.

Claim 40 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The rejection apparently stems from a misunderstanding regarding the dependency of claim 40. Claim 40 depends from claim 29, which establishes antecedent basis for "the purge curtain." Applicant requests withdrawal of the rejection in the next Office Action.

Claims 27-35, 40, 48, and 49 stand rejected under 35 U.S.C. 103(a) as being unpatentable over DiMeo (U.S. Patent No. 5,972,430) in view of Ohashi (U.S. Patent No. 6,059,885) and further in view of Yamamuka (U.S. Patent No. 6,312,526). Applicant requests reconsideration.

Claim 27 sets forth an ALD method that includes, among other features, injecting a precursor into a deposition chamber and separately injecting a purge material at a first flow rate through at least one purge passageway through a lid into the chamber. The injected purge material flows along at least a portion of the chamber walls. The method includes separating the injected purge material from a substrate holder with a flow director, ceasing

Appl. No. 09/805,620

the precursor injection, substituting the precursor injection for additional purge material injection, and adjusting the first flow rate to a second flow rate different from the first flow rate. Pages 2-3 and 7 of the Office Action allege that the cited combination of references discloses every limitation of claim 27. Applicant traverses.

Page 2 of the Office Action alleges that "Ohashi modifies first and second flow rates of the other purge gas in Figures 1a-1d." However, review of the text associated with such figures in column 10 and the figures themselves fails to reveal support for the Office's allegation. Specifically, Figures 1B-1D correspond to gas flow rate distribution in the vertical direction at positions B, C, and D shown in the apparatus of Figure 1A. Position B is the closest to straightening vane 17 while positions C and D are respectively lower. As the gas flow descends through the apparatus, the gas distribution profile understandably changes, producing progressively different gas distribution profiles such as shown in Figures 1B-1D.

The relied upon figures and text do not pertain to adjusting the flow rate of gas injected through large-diameter gas holes 17b (or small-diameter gas holes 17a). Consequently, Figures 1B-1D have nothing whatever to do with modifying "first and second flow rates of the other purge gas," as alleged on page 2 of the Office Action. At least for such reasons, Applicant asserts that the cited combination fails to disclose or suggest adjusting the first flow rate of purge material through the purge passageway through the lid to a second flow rate different from the first flow rate along with substituting the precursor injection for additional purge material, as set forth in claim 27.

Appl. No. 09/805,620

Claims 28-35, 40, 48, and 49 depend from claim 27 and are patentable at least for such reason as well as for the additional limitations of such claims not disclosed or suggested. For example, claim 48 sets forth that the purge exit port comprises one annular exit port and the injecting the purge material through the purge passageway through the lid comprises injecting through an enclosed annular channel and through a plurality of enclosed radial channel extensions from the annular channel to the one annular exit port along radii of the annular channel.

It is apparent from the Office's reliance on page 7 of the Office Action in Figures 2 and 3 of Ohashi and Figure 1 of DiMeo that the Office fails to appreciate the difference between the terms "annular" and "circular." Such terms are not synonymous. "Annular" refers to a ring-like structure or, in the most limiting sense, to a structure related to an annulus, the plane space between two concentric circles one within the other. Examples of annular structures are shown in Figures 4 and 6 of the present specification. Either way, in no case, does a circular opening disclose an annular structure. Both Ohashi and DiMeo are completely devoid of annular structures, in particular, a purge exit port comprising one annular exit port and an enclosed annular channel through which purge material is injected, as set forth in claim 48.

Claim 48 also sets forth Injecting purge material through a plurality of enclosed radial channel extensions from the annular channel to the one annular exit port along radii of the annular channel. Since the cited references fail to disclose or suggest injecting purge material through the annular channel and one annular exit port, it is impossible to determine

Appl. No. 09/805,620

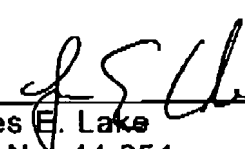
whether the references disclose or suggest enclosed radial channel extensions between such structures. At least for such additional reasons, claim 48 is patentable over the cited combination.

Applicant herein establishes adequate reasons supporting patentability of claims 27-35, 40, 48, and 49 and requests allowance of all pending claims in the next Office Action.

Respectfully submitted,

Dated: 13 Jan 2007

By: _____


James E. Lake
Reg. No. 44,854